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ABSTRACT

The Michigan Migrant Education Program was evaluated to determine at a statewide level the extent to which the general educational objectives are being attained. The study focused on 2 objectives: (1) to determine pupil changes in self-concept, attitude toward school, and reading achievement and (2) to determine aspects of the migrant education classrooms which are effective in promoting change. The study sample consisted of more than 800 pupils aged 5 to 12 from 69 classrooms representing 19 projects conducted during the summer of 1971. Pre- and post-testing provided no evidence that performance levels or measures of self-concept, attitude towards school, or reading achievement are associated with the length of time spent in the classroom. No special effects related to the level of self-concept concern or performance change concern were noted for any of the variables. Incidental findings were: (1) migrant pupils tend to be positive in statements about themselves, (2) they indicate positive attitudes towards school, (3) within-class variations with respect to age and reading achievement levels tend to be high, (4) reading achievement is less than that expected by age, and (5) silent reading performance matches or exceeds age-level expectations up to the third grade. Conclusions of the study suggest implications for educational planning, program development, and teacher training and selection. Related documents are RC 006 240 and RC 006 242. (MJB)

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Self-Concept, Attitude Toward School, And Reading Achievement: A Study of Michigan Migrant Education Summer School Programs

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Michigan Migrant Education Center
Central Michigan University
Mt. Pleasant, Michigan
March, 1972

RC 006241

An Abstract

SELF-CONCEPT, ATTITUDE TOWARD SCHOOL AND READING ACHIEVEMENT: A STUDY OF MICHIGAN MIGRANT EDUCATION SUMMER SCHOOL PROGRAMS

Charles F. Eiszler

The purpose of the study was to investigate at a state-wide level the extent to which the general educational objectives of the Michigan Migrant Education Program are being attained. The study focused on the following objectives which are implied by the priorities of the program:

1. To determine pupil changes in self-concept, attitude toward school, and reading achievement.

2. To determine aspects of the migrant education classrooms which are effective in promoting change.

Sixty-nine classrooms from 19 projects conducted during the summer of 1971 constituted the sample of the study. More than 800 pupils were measured on self-concept, attitude toward school, oral reading and silent reading achievement at various points during the operation of the projects. Those tested later were compared to those tested earlier to determine if the program resulted in changes. Classrooms were classified on two dimensions--a concern for self-concept development and a concern for performance change to investigate whether or not these characteristics of the classrooms had any special effects.

The data of the study provide no evidence that pupil performance levels or measures of self-concept, attitude toward school, or reading achievement are associated with the length of time spent in migrant education summer school classrooms. In addition, no special effects related to the level of self-concept concern or performance change concern were noted for any of these variables.

Several incidental findings of importance were noted: (1) Pupils of migrant education summer school projects tend to be significantly positive in their statements about themselves; (2) the pupils studied reported, on the whole, statements which would indicate overwhelmingly positive attitudes toward school; (3) within class variation with respect to age and reading achievement levels tended to be high; (4) average actual performance in reading achievement for migrant pupils is less than the expected average based on ages; (5) average silent reading performance matches or exceeds age-level expectations up to the third grade.

The conclusions of the study were suggested to have the following implications for educational planning, program development and teacher training and selection:

1. The priorities of the Migrant Education Program should be updated to match the educational problems which currently exist. A shift away from emphasis on self-concept, attitude toward school and oral language and toward individualized attention to specific silent reading skill development is suggested.

2. In teacher selection and training emphasis should be given to professional preparation in individualizing instruction.

3. A systematic procedure or set of guidelines should be adopted by local projects as they attempt to translate state-level priorities into specific behaviorally stated objectives.

4. Evaluation should focus on specific behavioral objectives formulated or adopted by projects rather than state-wide priorities.

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Perhaps most deserving of acknowledgment are the more than 80 teachers and project directors, without whose cooperation the project would have been difficult, if not impossible. Their interest in the education of migrant children is clearly reflected in the extent of their willingness to participate in a project of self-appraisal. For many the level of this interest revealed an uncommon dedication.

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INTRODUCTION

A study of special educational programs for the children of Michigan migrant farm laborers must begin with a brief description of the general context of special educational planning for Mexican American children and an acknowledgement of the reliance of such planning on the "compensatory education" model.

According to Carter (1970) the implicit purpose of "compensatory education" programs is to provide a remediation, reorientation, and remodeling of certain children in order to make up (compensate) for their "inadequacies" when compared to middle-class children.

Gordon and Wilkerson (1966, p. 159) agree: "It is not inappropriate that the programs of special education for the disadvantaged have been described as compensatory. They are attempts to compensate for, to overcome, the effects of hostile, different, or indifferent backgrounds. Their aim is to bring children from these backgrounds up to a level where they can be reached by existing educational practices. . ."

In his analysis of special educational programs for Mexican American children, Carter (1970, pp. 149-200) suggests that alternatives to the "adjust the child" programs have not been fully explored. Programs aimed at substantially modifying the school experience are found to be rare and regarded with suspicion by the mainstream of American education.

To the extent that Michigan educators, particularly those at the local level, are a part of the mainstream of American education, the programs developed in Michigan may be expected to reflect an emphasis on "adjusting the child" rather than "modifying the school."

Under the provisions of the Title I, Elementary Secondary Education Act, 1965, as amended by Public Law 89-750, the Migrant Unit of the State Department of Education in Michigan and local school and/or intermediate school districts cooperate to identify areas of the state which may qualify as migrant education service areas. The provisions of the Act provide for the disbursement of financial aid grants for the operation of migrant education projects aimed at providing "compensatory educational opportunities" for the child of a migratory agricultural worker and for the children of families which have "settled-out" of the migrant stream during the past five years. The local school and/or intermediate school districts of areas designated as migrant education service areas are encouraged to act as local education agencies in sponsoring migrant education projects for both the children of temporary residents of the state who remain in the migrant stream and for the children of the more permanent residents who have settled out.

Currently the migrant education projects aimed at the children of those still in the migrant stream consist primarily of summer school programs which run from six to ten weeks, usually in coordination with the harvest period of local agricultural products. Summer school projects generally propose to deal exclusively with the migrant child by way of devoting the full educational facilities to his needs. Year-round programs, in contrast, seem to currently focus on tutoring programs which attempt to support the migrant child in the conventional classroom.

The priorities of the Michigan Migrant Education Program as expressed by the Administrative Handbook (Michigan Department of Education, 1971) imply an attempt to generate educational projects which contain elements of both the "adjust the child" position and the "adjust the school" position. Two of the three priorities focus on the deficiencies of the child and aim at modifying language interference problems of the child and developing the child's self-concept. A third priority, developing awareness and appreciation of cultural heritage, reflects an attempt to modify the traditional monocultural influence of Michigan's schools.

Responsibility for translating the "priorities" of the Department of Education into specific educational objectives rests with the local or intermediate school district acting as a local education agency (LEA). LEA administrators are advised that specific objectives are to be based on a careful assessment of needs and expressed in "behavioral terms." (Migrant Education Program Administrative Handbook, 1971, p. 3). In addition, the Handbook points out the responsibility of the LEA to provide evaluation of specific program goals and to document gains.

Purpose of Study

The primary purpose of the current study, initiated and implemented through the Michigan Migrant Education Center, Central Michigan University, was to investigate at a state-wide rather than a local level the extent to which general educational objectives of the Michigan Migrant Education Program are being attained. The study focused on objectives implied by those priorities of the program which focus on adjusting the child to the education system. The priorities imply that the following pupil characteristics are primary targets

of change across all specific projects;

1. Reading achievement, including both silent reading and oral reading performance;
2. Self-concept, including attitudes and feelings about one's place in school, among peers, in the family, and general self-esteem;
3. Attitudes toward school, including feelings about the activities of school programs, the climate and structure of the school, and general school sentiment.

On a state-wide basis, the Michigan Migrant Education Program can be seen as influencing changes in these pupil characteristics, if it can be established that there is a relationship between the length of operation of a summer school classroom and the scores of pupils in the classroom on measures of these characteristics. A major assumption in this line of argument is that there are no normal or maturational changes in the specific behaviors related to these characteristics during a six-week period. In other words, it is assumed that reading achievement, self-concept, and attitude toward school do not systematically change during the six weeks of summer school for reasons outside of the educational program. Under this assumption, differences on these pupil characteristics which are associated with differences in the length of operation of the classroom in which the pupils participate constitute evidence of the effects of the program.

A secondary purpose of the current study was to determine if differences among classrooms with respect to two characteristics were responsible for differential levels of success in promoting change in pupil characteristics.

In a recent study, Hepner (1970) found that Mexican American male elementary school underachievers showed greater rates of achievement when placed in a prescriptive educational program than they had previously demonstrated in a typical classroom. In Hepner's study the prescriptive program consisted of behaviorally stated objectives focusing on academic skills, prescribing learning activities for specific children, and individualizing of instruction by the use of programmed materials and auto-instructional devices. The prescriptive approach was contrasted with a more traditional classroom with its focus on socialization rather than skill acquisition and its emphasis on competitive group instruction. In dealing with "minority" group children, the traditional classroom, Hepner noted, takes on the additional characteristic of attempting to "adjust the child," particularly with respect to such characteristics as pupil self-esteem which is believed by teachers to be a cause of pupil failure at academic tasks.

In the current study, the concerns of the traditional elementary classroom and the more prescriptive approach described by Hepner were considered to be independent dimensions rather than opposite ends of the same continuum. Classrooms were classified according to "concern for self-concept" an index of the more traditional approach, and "concern for performance change," an index of a more prescriptive approach. An attempt was made to determine if the relationship of reading achievement, self-concept, and attitude toward school to the length of classroom operation was dependent on the focus of the classroom with respect to each of these dimensions.

Specific Objectives

The specific objectives of the study are the following:

1. To establish the relationship between the length of operation of a classroom and the silent and oral reading performance of the pupils in the class.
2. To establish the relationship between the length of operation of a classroom and the level of self-appraisal or self-esteem of the pupils in the class.
3. To establish the relationship between the length of operation of a classroom and the attitude toward school of the pupils in the class.
4. To determine if the relationships between the length of operation of a classroom and pupil characteristics is dependent on the level of self-concept concern in the classroom.
5. To determine if the relationships between the length of operation of a classroom and pupil characteristics is dependent on the level of performance-change concern in the classroom.

If the Michigan migrant education program is successfully achieving the objectives implied in its priorities, then among the classrooms observed in the study, those that have been in operation for longer periods of time should have pupils with greater levels of achievement in silent and oral reading, more positive self-concepts, and more favorable attitudes toward school than those that have been operating for shorter periods when observed.

If the concerns for self-concept and/or performance change influence pupil change, then the relationships of pupil characteristics to length of operation of the classroom should be greater for those classrooms in which there is greater concern.

METHOD

In general terms, the methods of investigation used in the study involved the selection of a relatively representative sample of summer school classrooms, the assignment of these classrooms to a schedule of testing such that for each of four observation periods test results from a random subsample of the classrooms would be available and the designation of the observation periods such that they occurred at the beginning of the operation of a classroom, and every two weeks (or ten instructional days) thereafter. Analysis of differences among means for classrooms sampled in each observation period constituted a test of the relationship between the length of classroom operation and pupil characteristics.

Based on data collected by questionnaires completed by classroom teachers, it was possible to classify classrooms as "high" or "low" in self-concept concern and performance change concern. Analysis of the interaction of these characteristics with observation period differences constituted a test of question of the influence of these two types of concern.

A two-way analysis of variance (observation periods by classroom characteristic) was used with interest focused on the main effect for observation periods and the interaction effect between classroom characteristic and observation periods. Analyses were made with each pupil characteristic as a dependent variable for observation

periods by self-concept concern and for observation periods by performance change concern.

Specific aspects of the method are discussed in this section of the report.

Sample

The original design of the study was based in large measure upon information contained in 24 specific project proposals submitted to the Migrant Unit of the State Department of Education prior to May 15, 1971. In these proposals, estimates of the number of pupils who would participate in the various projects and requests for funding of professional salaries for instruction were provided. Although there were several instances of incomplete reporting of this and other "required" information in the proposals, it was possible to determine that roughly 125 proposed classrooms with approximately 15 pupils per classroom would constitute the population of classrooms for this study. These classrooms were made up of pupils in the grade range between first and fourth grade. Based on the estimates, a theoretical definition of the sample of classrooms was defined by a stratified random sampling procedure. Stratification was based on the number of population classrooms a particular project expected to have. The theoretical sample contained 80 classrooms selected so that they represented the various projects in proportion to each project's contribution to the population. The procedure called for classrooms to be selected randomly by teacher name from a list of teachers' names submitted by project directors.

Since project administrators were unable to specifically designate a classroom as a part of the population until the projects were underway and the pupils involved could be identified, it was

not possible to either randomly select classrooms or to match the actual sample to the theoretical sample. Project administrators were asked to identify and select classrooms for the study. In some cases, projects could not supply the number of classrooms assigned them by the stratification process without overrepresenting themselves in the study, since the actual population of classrooms was smaller than the estimated population. In the study, the theoretical sample was sacrificed to reality. The final actual sample, selected by project administrators constitutes roughly 60 percent of the total population of relevant classrooms.

Sixty-nine classrooms from 19 projects constituted the actual sample for the study. The largest project contributed 22 classrooms and 10 projects contributed one classroom each. The teachers of these classrooms were 24 males and 45 females. Less than 20 percent of the teachers had Spanish surnames.

Table 1-1 presents information on selected characteristics of the sample classrooms. This data was obtained from a questionnaire completed by the teacher. Fifty-four (or 78 percent of the total sample) teachers responded to the questionnaire which asked them to indicate their experience in teaching at the elementary level, experience in teaching in the migrant education program, whether or not they could speak Spanish, and the number of Spanish-speaking and non-Spanish speaking aides in the classroom.

The data presented in Table 1-1 suggests that while teachers in the Michigan migrant education program are not notably lacking in teaching experience at the elementary level in general, almost two-thirds have had one year or less experience with the children of the migrant program.

Table 1-1: Selected Characteristics of Sample Classrooms

Characteristic	% Responding (N=54)
Teacher's experience at the elementary school level in years:	
1 or less	31
2 to 4	29
5 to 10	15
more than 10	25
Teacher's experience in the migrant program in years:	
None	40
1	22
2	18
3	16
More than 3	04
Teacher who speaks Spanish:	
Yes	20
No	64
No response	16
Teacher's aide who speaks Spanish:	
Yes	70
No	30

In addition the data suggests that the instructional system of the migrant projects is far from exerting a bi-cultural influence as far as language is concerned. Only 20 percent of sample teachers indicated an ability to speak Spanish. Clearly there is a single language of instruction in the classrooms of the summer school projects, although the availability of Spanish-speaking aides suggests that some communication may be carried out in that language.

Not presented in the table is further data regarding the aides in the summer school classrooms. According to the respondents to the questionnaire, there are slightly more than two aides per classroom on the average, but fewer than 45 percent of all aides speak Spanish.

Attendance data for the dates on which tests were given as part of the study shows that there are 13.4 pupils in the average classroom, with class sizes ranging, in reality, between three and 28.

As a part of the questionnaire teachers were asked to complete a time schedule which portrayed a typical day in their classrooms. On the basis of this schedule, information regarding the amount of time spent in connection with various academic activities was determined. On the average 56 minutes a day was devoted to reading instruction, 49 minutes to language skills other than reading, 41 minutes to mathematics, 49 minutes to social studies, and 45 minutes to science in those classrooms reporting activities which could be identified as related to these areas. It is important to note that in six classrooms it was not possible to identify any activities related to instruction in reading. For language skills, mathematics, social studies, and science the corresponding figures are 9, 8, 43, and 40 classrooms. On the basis of time allocated to them, communication skills are a clear priority

in the migrant education summer school classrooms. Social studies and science are practically ignored. It was difficult to identify activities listed on the schedules which could be reliably described as related to instructional goals of developing cultural heritage and fostering more positive self-concept.

In another section of the questionnaire teachers were asked to list the important goals which they had for the summer school classroom. Table 1-2 presents a content analysis of the goals which teachers identified.

Table 1-2: Goals of Migrant Education Summer School Teachers Listed in Order of the Frequency of Mention on Classroom Characteristics Questionnaire

Goals	Percent
Develop greater efficiency in speaking, writing and reading English	76
Develop awareness of cultural heritage and foster positive self-concept	37
Perform basic arithmetic and solve elementary math problems	28
Learn and use proper health habits	26
Develop a positive attitude toward school	24
Develop an interest in and appreciation of art and music	22
Develop social skills and the ability to get along with other children	19
Foster psychological adaption to the classroom: (1) Develop feelings of comfort in classroom situation and (2) Create experience of success in learning situations	19

In general the data available on the sample classroom suggests that the teachers in the classrooms express goals and use activities which appear to be highly consistent with the priorities of the migrant education program, with one exception. Although they identify

appreciation of cultural heritage as an important goal they less frequently report the use of activities appropriate to this goal.

Classroom Characteristics

Using a list of 30 items which the teacher could rate as "unimportant," "of some importance," "very important" or "we do not use this," two dimensions of classroom concern or focus identified and measured--Self-Concept Concern (SCC) and Performance-Change Concern (PCC).

Self Concept Concern was measured by the following five items:

Use exposure to adult models to raise children's expectations and levels of aspiration.

Allow children who don't do well academically to feel important by doing such things as decorating the classroom.

Use bulletin boards to give recognition to children whose achievement in academics brings them no attention.

Use mirrors and pictures in the classroom to make the child aware of the importance of his own image.

Use role playing to provide understanding and gratification of children's desires to be admired and respected by peers.

Teachers' ratings of these characteristics were scored according to how important they were in describing the classroom. For SCC the possible range of scores is between 0 and 15 with higher scores indicating a greater concern for self-concept. Figure 1-1 shows the distribution of 54 classrooms with respect to SCC.

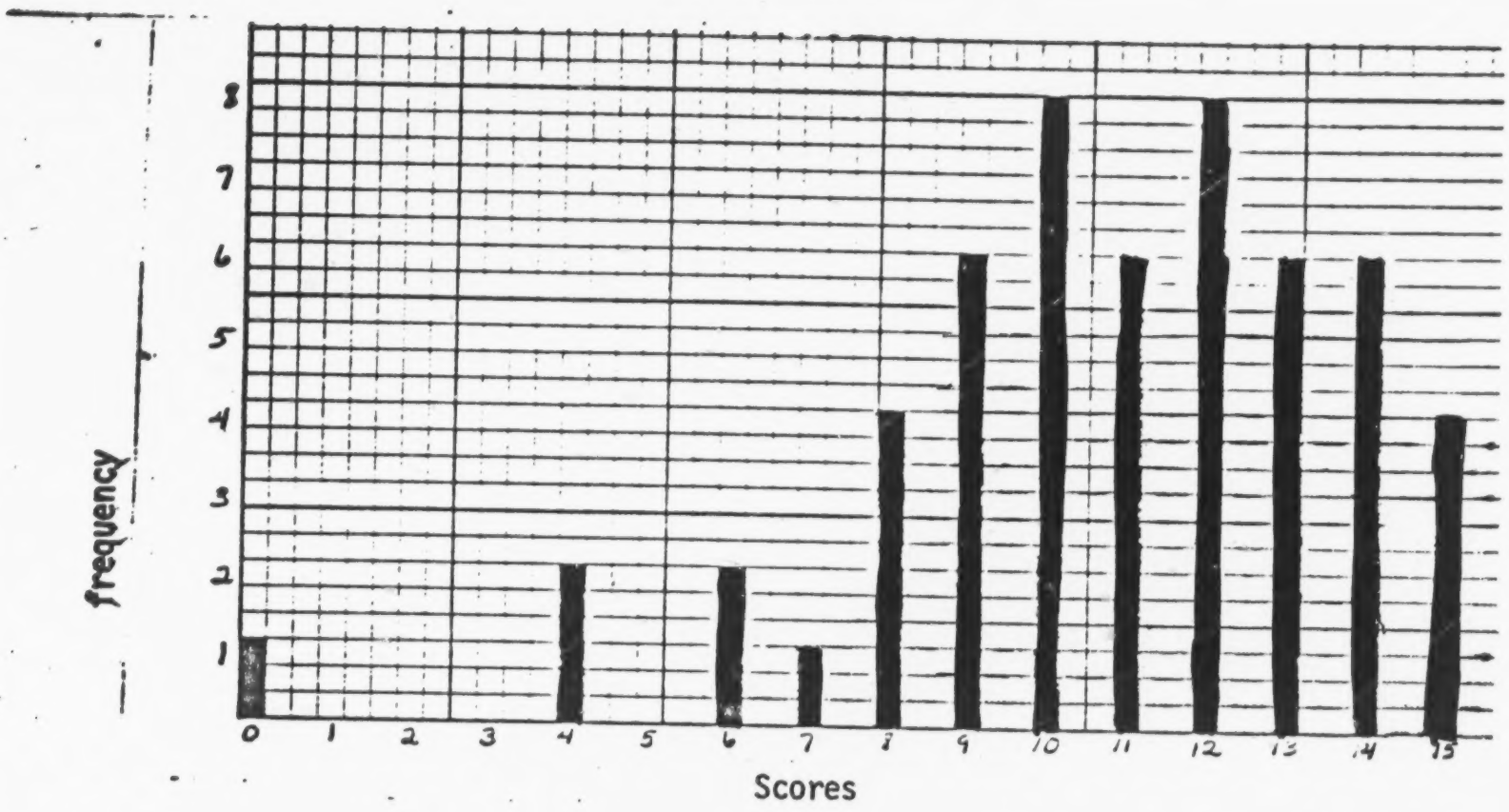

Figure 1-1: Distribution of Classroom Scores on Self-Concept Concern

The distribution indicates considerable variation with respect to SCC, but, in general, the classrooms of the study were characterized by a high degree of concern for pupil self-concept.

Reliability of this five-item scale was estimated at r = .55 using Hoyt's analysis of variance formula. (Guilford, 1954)

Performance Change Concern was measured by the following fourteen items:

Write specific objectives for the entire class.

Test or rate each child at the beginning of the program to determine what he should be doing.

Give a lesson which children work on individually.

Provide practice exercises which a pupil can complete on his own.

Use materials which allow a student to progress at a pace different than the other students in the class.

Allow children who do well academically to decorate the classroom as they wish.

Use graphs to record progress, so pupil can have satisfaction of seeing progress he is making.

Write specific objectives for individual pupils.

Have different children working on different lessons at almost anytime during the morning.

Use assembly programs to give recognition to children who achieve.

Post work on bulletin boards to give recognition to academic achievement.

Make a specific assignment for an individual pupil.

Use materials which allow an individual to correct his own mistakes.

Use self-instructional programmed devices in the classroom.

As with SCC, teachers ratings of the PCC items were scored according to how important they were in describing the classroom. The possible range of scores for this scale is between 0 and 42 with higher scores indicating a greater concern for Performance Change. Figure 1-2 shows the actual distribution of classrooms on this scale.

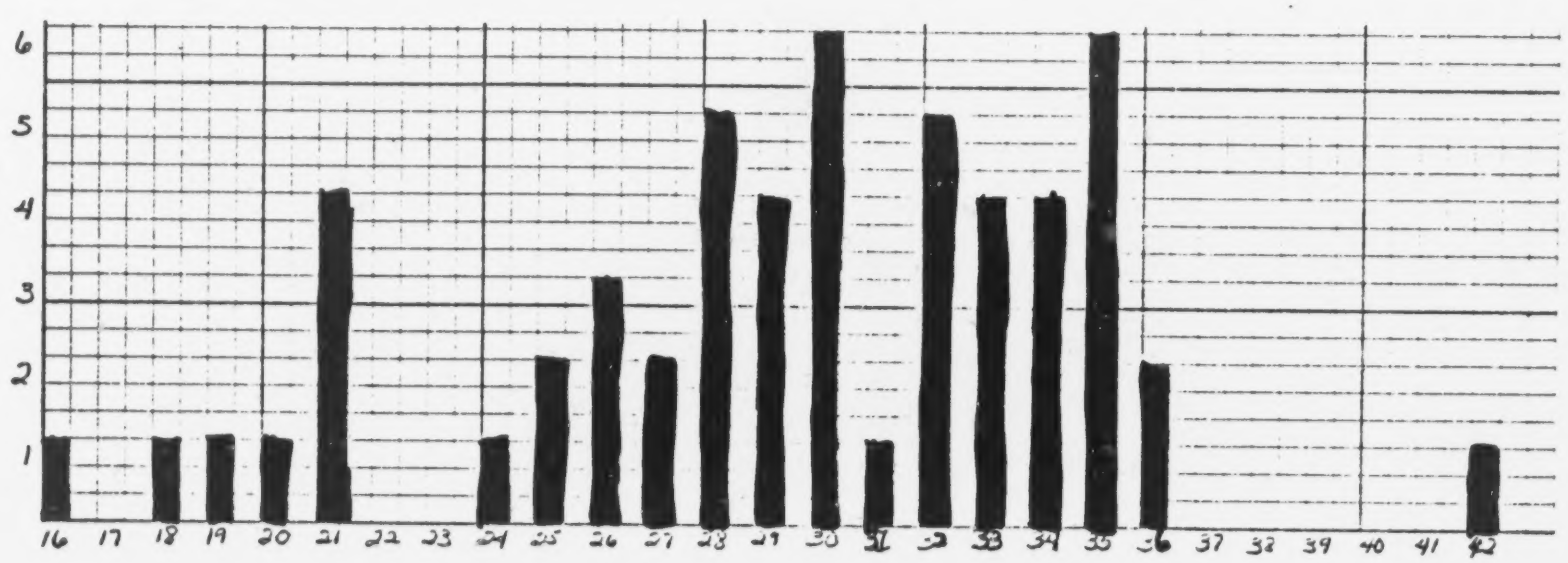

Figure 1-2: Distribution of Classroom Scores on Performance Change Concern

Concern for "performance change" was, in general, moderately expressed in the sample classrooms.

The reliability coefficient for this 14-item scale, using Hoyt's analysis of variance method was r = .60.

The product-moment correlation coefficient for SCC and PCC scores in the sample of 54 classrooms was r = .29. Although the correlation indicates a significant relationship ($p < .05$) between the two variables the degree of this relationship is very slight. This data is consistent with the assumption made in the current study that the two dimensions are relatively independent.

As independent variables (along with observation periods) in the current study, SCC and PCC scores were categorized as "high" or "low" concern on the basis of a split at the median of each distribution.

Pupil Characteristics Instruments

Four tests were used in the evaluation project: a Self-Appraisal Inventory (SAI); a School Sentiment Index (SSI); the Gilmore Oral Reading Test (GORT); and the Survey of Primary Reading Development (SPRD). In the preliminary report the total scores for the SAI, the SSI and the SPRD will be reported. For the GORT the score for accuracy will be studied.

Self-Appraisal Inventory (SAI)[1]

The SAI consists of forty questions to be asked of children. Children respond to questions by marking a "yes"or "no"on an answer sheet.

[1]This test and the SSI are based on items developed by the Instructional Objectives Exchange, Los Angeles, California.

The purpose of the test is to obtain, in a straightforward fashion, a child's responses to questions which pertain to four aspects of self-concept.

Three of these four dimensions describe the child's feelings about kinds of social settings in which the child's competence and worth is evaluated by significant other persons. These evaluations are thought to be incorporated by the child into the developing conception which he has of himself. The three kinds of social settings examined in this test are: (1) the family; (2) the peer group; and (3) the school. The fourth dimension contains questions which reflect a more general, global estimate of self-esteem. Each of these subtests has a different number of items. The score for each of these subtests reflects the number of positive feelings expressed by the child in relation to that dimension of the self-concept. A positive feeling could be expressed by the child in one of two ways: (1) by affirming a positive statement, or (2) by denying a negative statement.

Table 1-3 presents sample items for each of the subtests of the SAI. It also reports the number items per subtest and the K-R. 20 reliability coefficient for each subtest.

Table 1-3: Sample Items and Reliability Coefficients for SAI Subtests (N=849)

Subtest	No. Items	Sample Items	Reliability
Family	6	Do you get into trouble a lot at home? Are you an important person to your family?	.25

Table 1-3: (Continued)

Subtest	No. Items	Sample Items	Reliability
Peers	13	Do you have a lot of friends? Is it hard for someone to be your friend?	.42
School	12	Can you give a good talk in front of your class? Would you like to stay with your family instead of going to school?	.57
General	9	Do you wish you were younger? Do you like to be who you are?	.32

With the exception of the subtest for school as a context, the separate subtest scores of the SAI do not appear to have sufficient reliability to be useful as indices of self-concept in the current study. It should be noted, according to Guilford (1954, p. 380), the K-R 20 provides a lower bound reliability estimate and may not reflect the true stability of the scores over time.

The reliability of total test scores was considerably higher than any of the subtest scores, r = .73. In the current study the school subtest and the total test scores were considered sufficiently reliable to indicate differences if they should exist between observation periods and classrooms grouped according to Performance Change Concern or Self-Concept Concern.

School Sentiment Index (SSI)[2]

The SSI consists of 23 questions which are administered to children in a fashion similar to the administration of the SAI.

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[2] This instrument is based on questions developed by the Instructional Objectives Exchange in Los Angeles.

The purpose of the test is to obtain, in a straightforward fashion, a child's responses to questions related to four aspects of attitude toward school. The four aspects of this attitude which are reflected in the instrument are: (1) attitude toward various school activities; (2) attitude toward school structure and social climate; (3) the attitude toward peers in the school situation; and (4) a general, more global attitude toward school as a place to be.

Each of the dimensions of this measure has a different number of items. An individual's score on each of the dimensions reflects the number of positive feelings expressed in relation to that aspect of attitude toward school. A positive feeling may be expressed by the child in one of two ways: (1) by affirming a positive statement or (2) by denying a negative statement.

Table 1-4 presents sample items for each of the subtests of the SSI. It also shows the number of items per subtest and the K-R 20 reliability coefficient for each subtest.

Table 1-4: Sample Items and Reliability Coefficients for SSI Subtests (N = 915)

Subtest	No. Items	Sample Items	Reliability
School Activities	7	Do you like to tell stories in front of your class? Do you like to read in school?	.64
Structure and Climate	5	Are adults at your school friendly to children? Are you afraid to go to the office at your school?	.29

Table 1-4: (Continued)

Subtest	No. Items	Sample Items	Reliability
Peers	5	When you try to do your school-work do other children bother you? Are the children in your class friendly to you?	.41
General	6	Is school a happy place for you to be? Do you like to stay home from school?	.52

As with the subtests of the SAI, SSI subtest scores proved not to be sufficiently reliable to warrant separate analysis. An exception was the general subtest. Since the total test score for 23 items was acceptably reliable, K-R 20 coefficient of r = .73, and, since it could also be interpreted as an index of a general global attitude toward school, it was deemed unnecessary to report a separate analysis for the 6-item general subtest.

It should be noted, as was the case with the SAI, the K-R 20 coefficients reported here are probably lower bound estimates of the reliabilities involved and the stability of the subtests may prove to be considerably greater than these values.

Gilmore Oral Reading Test[3]

The Gilmore Oral Reading Test is an individually administered test which provides a way of analyzing oral reading performance for grades 1 through 8. The test measures accuracy of oral reading, comprehension of material read, and rate of reading.

Ten paragraphs which form a continuous story and a picture which portrays the characters and events in the story are presented to the pupil to be read. The paragraphs are arranged in order of difficulty, from easy to difficult. The pupil reads only those paragraphs within a reading range extending from his 'basal level' (a paragraph in which he makes no more than two errors) to his 'ceiling level' (ten or more errors). As the student reads each paragraph, the examiner records his errors according to eight categories of error type: (1) substitutions, (2) mispronunciations, (3) words which could not be attempted, (4) disregard of punctuation, (5) insertions, (6) hesitations, (7) repetitions, and (8) omissions. The Accuracy (Acc) score indicates the extent to which the pupil can read aloud without error at a wide range of levels of difficulty. The higher the score the more accurate the reading at increasing levels of difficulty.

The test also includes a measure of the comprehension based on sets of 5 questions administered as soon as the pupil has finished reading a paragraph. Most of the questions, particularly at the lower levels of the test, involve simple recall of material which is read. Figure 1-3 shows the first paragraph of Form C and the five questions measuring comprehension at this level. The Comprehension (Comp) score

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[3] Developed by John V. and Eunice C. Gilmore. Harcourt, Brace & World, Inc.

Paragraph C-1	Questions
The girl has a cat.	1. What is the girl's name?
The girl is Mary.	2. What is the cat's name?
The cat is Puff.	3. What color is the cat?
Puff is gray.	4. Who's in the yard?
Father is in the yard.	5. What is Father doing?
Father works hard.	

Figure 1-3 Paragraph C-1 and Comprehension Questions of Gilmore Oral Reading Test.

reflects the number of questions answered correctly within the reading range plus credit for those paragraphs, if any, below the basal leve. Thus the greater the score the higher the level of measured reading comprehension.

In addition to these two measures, each reading is timed to obtain a Rate score--number of words read per minute.

Gilmore and Gilmore (1968) report alternate forms reliability coefficients for a grade 3 and a grade 6 sample. Table 1-5 presents this data.

Table 1-5 Reliability Data for the Gilmore Oral Reading Test (After Gilmore, 1968)

Grade	N	Alternate Forms Reliability		
		Acc	Comp	Rate
3	51	.94	.60	.70
6	55	.84	.53	.54

Reporting on evidence of validity the authors of the Gilmore show moderately high correlations between Gilmore Accuracy and two other oral reading tests--the Gray Standardized Oral Reading Paragraphs and the

oral reading test from the Durrell Analysis of Reading Difficulty. Correlations of Gilmore Comprehension and Rate scores with these measures were moderate to low. Table 1-6 presents these correlations.

Table 1-6: Correlations Between the Gilmore Oral Reading Test and Two Other Oral Reading Tests

Test	Gilmore		
	Acc	Comp	Rate
Gray	.77	*	.45
Durrell	.80	.59	.50

* The report on the Gray test does not include a comprehensive measure.

Survey of Primary Reading Development (SPRD)[4]

The purpose of the Survey of Primary Reading Development test is to determine the level of reading development of primary grade children. Six subtests sample skills associated with the typical levels of development: pre-reading forms comparison, the gradual attachment of meaning to written symbols, and successively higher levels of sight vocabulary gradually combined with reading of sentences and stories with comprehension. Test 1, Form Comparison, requires the student to visually discriminate between pairs of geometric forms, ranging from simple to complex in detail. Test 2, Word Form Comparison, is similar to Form Comparison but utilizes words instead of geometric forms. Tests 3 and 4, Word Recognition and Sentence Recognition evaluate the child's ability to hear, remember, and select from the several alternatives a word or sentence, respectively, pronounced by the examiner. Test 5, Sentence Comprehension, measures the ability to select from among three alternatives for each item a word, or in one instance, a group of words which best completes a statement.

[4] Developed by J. Richard Harsh and Dorothy Soeberg. Educational Testing Service, Berkeley, California.

Test 6, Story Comprehension, includes five stories with 4 to 9 statements following each story. The student, after reading each story, is to designate those statements that are true on the basis of what was read. Each subtest consists of a different number of items. The total score on this test reflects the individual's standing relative to a sequence of skills which comprise silent reading performance. The higher the score, the greater the level of silent reading achievement.

An example of the type of item employed in each subtest and the total number of items for each subtest is presented in Table 1-7.

Table 1-7: Subtests of the Survey of Primary Reading Development

Subtest	Example	Total Number of Items
Form Comparison	Examiner:"If the pictures are the same, draw a circle around both of them. If they are not the same, do not mark them."	12
Word Comparison	Examiner: "Draw a circle around the two words if they are the same. If they are not the same, do not mark them." baby play	14
Word Recognition	Examiner: "Draw a circle around the word 'I'." come I here little	17
Sentence Recognition	Examiner: "Draw a circle around the words that say, 'Look at me.' " Come and play. Look at me. See the airplane.	8
Sentence Comprehension	Examiner: "Read the words to yourself. Draw a circle around the words that make the sentence correct." Bill is a house tree boy	9

Table 1-7: (Continued)

Subtest	Example	Total Number of Items
Story Completion	Examiner: "Read the story and mark the sentences that tell what you read in the story." Dick and Susan The boy is Dick. The girl is Susan. Dick and Susan play with the ball. A. Dick is playing ball. B. Mother is playing ball. C. Susan is a girl.	28

The Manual (Harsh and Soeberg, 1965) reports split half reliability coefficients for two samples (N = 87 and N = 304) of r = .91 for both. A test-retest coefficient computed for a sample of 128 with a two-week interval between testing periods was r = .88. No information is available on the reliability of subtest scores.

Content validity of the test is claimed on the basis of the set of procedures used to select test items. It is reported that the items are based on materials used in the primary grades in the state of California. A committee of "teachers, consultants and principals gathered samples of dictated stories of primary children which had been made from the chart stories, a composite vocabulary was compiled and combined with vocabulary lists from various reader series." (Harsh and Soeberg, 1965, p. 6).

Predictive validity is claimed for the test on the basis of the correlation between SPRD test scores for 27 children and reading competency ratings by a specialist who used a diagnostic battery in examining these children. The correlation coefficient was .79. The

authors believe this value to be an underestimate because of the nature of the sample. It represented a restricted range of values on both measures since it was composed of children previously identified as having reading difficulties. With a sample from a more heterogeneous population the coefficient would probably be higher.

Data Collection Procedures

After selection for participation in the study, teachers were assigned a schedule of testing which required them to give one of the four tests during each of the four Observation Periods and all four of the tests at least once during the program. The Observation Periods were designated by the investigator to correspond to different lengths of classroom operation: Period 1, during the first three days of operation; Period 2, between 9 and 11 days of operation; Period 3, between 14 and 16 days of operation; and Period 4 between 18 and 21 days of operation.

In the cases of the SAI, the SSI and the SPRD, all pupils in the classroom on the day of testing were given the test. For the Gilmore Test, five pupils were randomly selected by the teacher, using a procedure specified by the investigator, to be tested.

Analysis of Data

As a result of these procedures four randomly assigned independent samples of classrooms were assigned to give each test and the samples were associated with differing lengths of operation of the classroom. Using this data collection paradigm and classroom averages as the units of observation, a two-way analysis of variance to test the

difference among mean scores for observation periods could be expected to reveal differences associated with varying lengths of classroom operation as well as differences related to classroom characteristics.

Observation Periods

Since differences in observation periods means is a major interest in the current study, observation periods may be considered an additional independent variable. As such it is appropriate to evaluate differences in the samples from observation period to observation. Data collected in connection with the SPRD allows description of the observation periods in terms of age and sex of pupil. Table 1-8 presents the percent of male and female pupils at each of five age levels within each observation period.

Table 1-8: Percent of Male and Female Pupils at Five Age Levels in Each Observation Period

Age Groups	Observation Period							
	1 (N = 179)		2 (N = 240)		3 (N = 278)		4 (N = 218)	
	M	F	M	F	M	F	M	F
5 - 6	13.4		23.4		16.9		41.3	
	7.8	5.6	11.7	11.7	8.3	8.6	19.3	22.0
7	9.5		17.6		20.9		11.5	
	6.1	3.4	6.3	11.3	10.8	10.1	3.7	7.8
8	19.5		21.7		24.8		12.9	
	11.7	7.8	12.1	9.6	10.1	14.7	6.0	6.9
9	27.4		17.9		17.3		13.7	
	12.3	15.1	8.3	9.6	7.6	9.7	5.0	8.7
10 - 12	30.1		19.4		20.2		20.6	
	14.5	15.6	7.9	11.5	10.8	9.4	7.8	12.8
Subtotal	52.4	47.5	46.3	53.7	47.6	52.4	41.8	58.2
Total	99.9		100.0		100.0		100.0	

Examination of the data in Table 1-8 suggests that the pupil population in the classrooms which were sampled changes from the first week of summer school operation to the sixth week. In classrooms sampled early in their operation males are more heavily represented than females (52% to 48%). However during the sixth week of operation, the proportion of females is considerably greater than the proportion of males (58% to 42%).

The proportion of various age groups represented in the sample also shifted from early in the programs to later. Most noticeable age shifts are in the youngest and oldest age categories. Young children, ages 5 and 6, increased in the sample from 13.4% to 41.3%. Older children, ages 10 to 12, decreased from 30.1% to 20.6%.

These shifts may be interpreted to mean that a random sample of classrooms selected early in the program will be significantly older and composed of significantly more male pupils than random samples of classrooms selected near the end of the summer. The age shift in particular presented some problems for the interpretation of age-related variables--oral and silent reading achievement.

Another important aspect of the sample in relation to age was the variability within the classrooms. Using data available from the SPRD tests it was possible to classify each of 57 classrooms into three categories on the basis of age difference between youngest and oldest pupil in the classrooms. The arbitrary category system was as follows: high variability, 36 or more months difference; moderate variability, 13 to 35 months difference; low variability, 12 or fewer months difference. Of the 57 classrooms, 40 percent were high variability, 33 percent moderate variability, and 27 percent low variability.

Analysis Paradigm

As a way of summarizing the methods used in the study, the analysis paradigm is presented in Figure 1-3.

Classroom Characteristic	Observation Periods				
	1	2	3	4	Means
High	G_{11}	G_{12}	G_{13}	G_{14}	$\bar{G}_{1.}$
Low	G_{21}	G_{22}	G_{23}	G_{24}	$\bar{G}_{2.}$
Means	$\bar{G}_{.1}$	$\bar{G}_{.2}$	$\bar{G}_{.3}$	$\bar{G}_{.4}$	$\bar{G}_{..}$

Figure 1-3: Analysis Paradigm for Migrant Education Summer School Programs

In the analysis of the data according to the paradigm, each dependent variable was evaluated separately. To clarify the analysis, SPRD total scores are used as an example in the following discussion, but the same analysis was repeated for each dependent variable. In addition the discussion that follows uses Self-Concept Concern as the classroom characteristic. The analysis of each dependent variable was repeated with Performance Change Concern as an independent or classification variable.

As shown in Figure 1-3, G_{11}, G_{12}, G_{13}, G_{14} are groups of classrooms which have been identified by the Classroom Characteristics Questionnaire to have "high" Self-Concept Concern. Similarly G_{21}, G_{22}, G_{23} and G_{24} are groups of classrooms identified as "low" in SCC. High and low SCC are subdivided in the design into four groups according to the Observation Period in which measurements of dependent variables (pupil characteristics) were made. In this example, G_{11} and G_{21} are two groups of classrooms in which pupils were given the SPRD in the first observation period.

G_{12} and G_{22}, G_{13} and G_{23}, and G_{14} and G_{24} are groups in which pupils were tested in the second, third, and fourth observation periods respectively.

Each of the eight groups contained different numbers of classrooms depending on the pupil characteristic being evaluated. For the SPRD, Table 1-9 shows the number of classrooms in each group.

Table 1-9: Sample Sizes for the SPRD

Classroom Characteristic	Observation Periods				Total
	1	2	3	4	
High SCC	5	8	6	4	23
Low	7	4	9	9	29
Total	12	12	15	13	52

In the analysis, adjustments for different numbers of classrooms in the various groups was made by the least-squares solution. (Winer, 1962, p. 224).

In the design of the current study, the classrooms were the unit of observation. That is, classrooms were the smallest units of independent observation. Consequently the analysis of the study was completed with classroom means as the basic data of the analysis. Thus the strategy of the analysis is to compare the mean of the classroom means across observation periods and the interaction of the mean of the classroom means for different levels of SCC with different observation periods.

In the context of the example used to demonstrate the analysis paradigm it is possible to operationalize the two major evaluation questions as follows:

Question 1:

Is the level of reading achievement as measured by the SPRD related to the length of operation of the migrant education summer school classroom?

This question is answered by comparing the mean of classroom means for the SPRD from observation period to observation period. If participation in the classes affects reading achievement, the mean for later observation periods should be significantly greater than the mean for earlier periods. Or $\overline{G}_{.1} < \overline{G}_{.2} < \overline{G}_{.3} < \overline{G}_{..}$.

Question 2:

Does the level of Self-Concept Concern of a classroom have a differential effect on the SPRD achievement levels across observation periods?

This question is answered by an analysis which compares the means within SCC level and observation period groups. If there is no interaction and SCC level has the same effect at each observation period, the difference between the pairs of means G_{11} and G_{21}, G_{12} and G_{22}, G_{13} and G_{23}, G_{14} and G_{24} will be some constant factor. If there is an interaction the difference between one or more of these pairs would deviate from the hypothetical constant factor. Figure 1-4 shows the plotted means of a hypothetical interaction for the SPRD results.

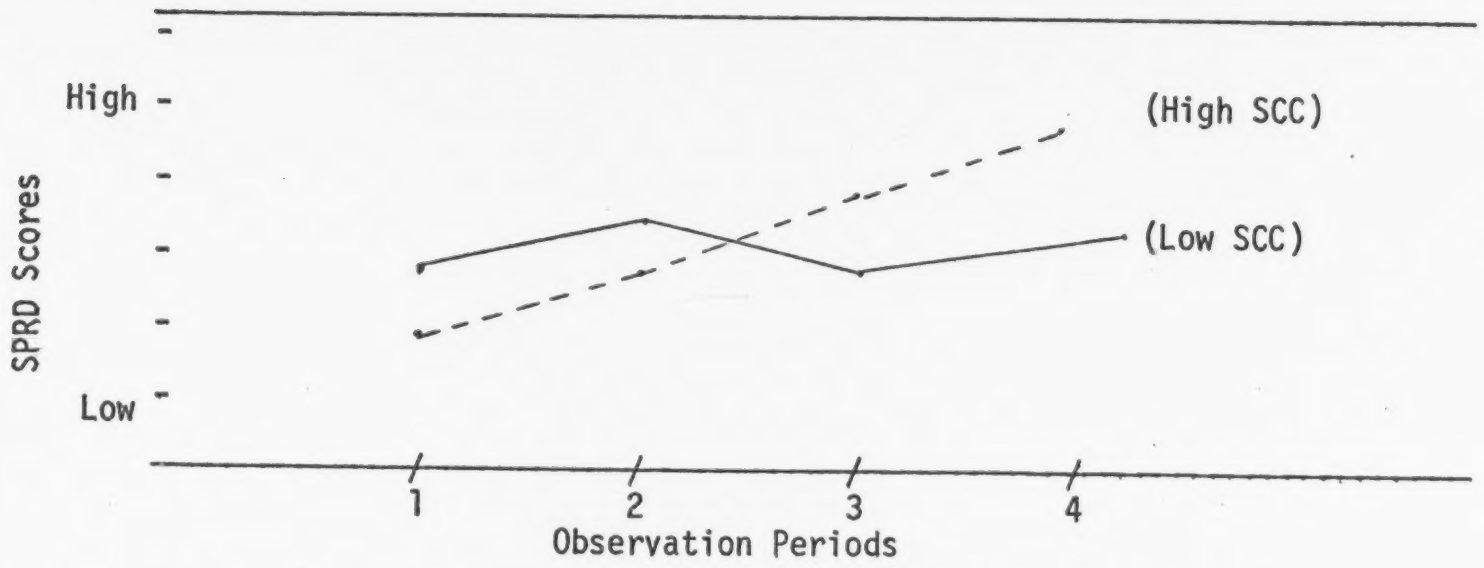

Figure 1-4: Hypothetical Interaction Between SCC and Observation Periods for the SPRD Scores

In this hypothetical example, the significant interaction shows that classrooms in which there is "high Self-Concept Concern" have some

effects on the pupils' achievement levels, i.e. show greater means for longer periods of operation, while classrooms "low in Self-Concept Concern" do not.

The importance of the investigation of interactions in the current study is emphasized by the fact that some "types" of classrooms may be effective, but their effects may be obscured in the overall analysis related to the first major evaluation question.

In each analysis the data was examined for an overall effect relating the length of classroom operation to the level of the pupil characteristic and an interaction effect relating the overall effect to differences in the type of classroom or classroom characteristic.

RESULTS

The analysis of the data on pupil characteristics is reported in three sections, each devoted to a different variable: self-concept, attitude toward school and reading achievement. Each of these sections is further divided into subsections related to the two major evaluation questions and a third subsection reporting additional findings of interest and relevance to the evaluation of the migrant education summer school programs of the state.

Pupil Self-Concept

In the current study pupil self-concept was measured by both the SAI total score and the SAI school subtest score.

Table 2-1 presents the means for the various analysis groups on these two variables and Table 2-2 summarizes the two analyses of variance for each variable.

Table 2-1: Mean SAI Total Scores and SAI: School Context Scores for Various Analysis Groups

Classroom Characteristic	Level	Observation Periods					Dependent Variable
		1	2	3	4	Total	
Self-Concept Concern	High	23.3	25.0		24.9	24.4	SAI Total
	Low	24.4	25.4		24.1	24.5	
	Total	23.9	25.2		24.5		
Performance Change Concern	High	24.2	26.1	23.8	25.0	24.6	SAI Total
	Low	23.6	24.4	24.4	25.7	24.3	
	Total	23.9	25.2	24.1	25.3		
Self-Concept Concern	High	7.2	7.8	a	7.1	7.3	SAI School Context
	Low	7.4	7.6		7.1	7.3	
	Total	7.3	7.7		7.1		
Performance Change Concern	High	7.3	8.0	6.8	7.1	7.3	SAI School Context
	Low	7.4	7.4	7.1	8.3	7.4	
	Total	7.3	7.7	6.9	7.5		

[a]Because of an unusual distribution of classrooms within the SCC categories from observation period to observation it was necessary to collapse the third and fourth observation periods for this variable.

Table 2-2: Summary of Analyses of Variance for SAI Total and SAI: School Context Scores

Variable	Source of Variation	SCC			PCC		
		df	MS	F	df	MS	F
SAI Total	Classroom Characteristic	1	.076	--[a]	1	1.263	--
	Observation Periods	2	6.475	--	3	6.739	--
	Interaction	2	4.079	--	3	3.786	--
	Error	47	10.261		45	10.452	
SAI: School Context	Classroom Characteristic	1	.010	--	1	.242	--
	Observation Periods	2	1.284	--	3	1.422	--
	Interaction	2	.109	--	3	1.191	--
	Error	47	1.534		45	1.482	

[a]F values of less than 1 are not reported.

Examination of the means in Table 2-1 shows slight variation from observation period to observation period and a slight tendency for the two variables to interact. However, the results of the analyses of variance provide no basis for attributing significance to any variation in the means for any of the groups. On the basis of the tests of significance variation among the means of various groups must be attributed to chance. There is no reason to believe that there is a relationship between the length of operation of the summer school classroom and the level of self-concept. Nor is there any reason to believe that differences with respect to Self-Concept Concern or Performance Change Concern have any special effects which are obscured by the overall analysis.

Beyond the major evaluation questions, however, the following results of the study have implications for program operation at a state-wide level.

First, responses to the items of the SAI were in general positive. For 28 of the 40 items, the proportion of positive-keyed responses was so much greater than the proportion of negative-keyed responses that the likelihood of the results occurring by chance was less than 1 in a 100 for each item. Table 2-3 presents the 10 items which evoked the most positive responses for the total sample of 849 pupils and the percent responding in the positively-keyed direction.

Table 2-3: Ten SAI Items Evoking Most Positive Response and Percent of Positive Response in the Total Sample

Item	Percent Positive Responses
Do you like to be who you are?	84
Do you let other children tell you what to do?	83
Do you have lots of friends?	83
Is it fun to do the things you do?	79
Do you wish you were someone else?	76
Are you a good child?	76
Do you feel sad when you are in school?	75
Are you good in your schoolwork?	74
Are you sad when you are with other children?	74
Is it hard for you to talk in your class?	73

Of the 12 items to which the response was not significantly positive, there were 6 items to which the responses in the negative-keyed direction were significant. Table 2-4 shows the 6 items evoking negative response and the percent of pupils responding in a negative-keyed direction.

Table 2-4: Six Items Evoking Negative Response and Percent of Negative Responses in Total Sample

Item	Percent Negative Responses
Do you tell your family when you are mad at them?	74
Do your friends do what you tell them?	59
Do you often forget to do things that you say you'll do?	57
Do lots of other children finish their schoolwork before you?	56
Do you like the teacher to ask you questions in front of other children?	54
Do you wish you had more friends to play with who are younger than you are?	53

As the data in Table 2-4 suggest, negatively-keyed responses, when they occurred in significant proportions, were far less highly endorsed than positively-keyed responses which were significant.

The six items for which responses did not significantly favor either keyed direction are of interest because they, along with the items presented in Table 2-4, run counter to the major trend of the data which involved high frequencies of positively-keyed responding. The six items which were not significant in either direction are presented in Table 2-5. For these items the percent of positively-keyed responses is shown.

Table 2-5: Six Items Evoking Neither Significant Positive or Significant Negative Self-Concept Responses

Item	Percent Responding Positively
Do you wish you were younger?	48
Do you say things when you want to?	49
Do you have more friends than other children?	49
Do people like other children more than they like you?	50
Do you feel all alone lots of times?	52
Do you forget many things that you learn?	48

A second observation is based on an examination of the items grouped according to subtest, which shows the average positive-keyed percent for General Self-Appraisal to be the highest with 65 percent. The average positive-keyed percent for the Family Context items is 55 percent. The average positive-keyed percents for Peer Group Context items and School Context items is .60 percent.

Pupil Attitude Toward School

In the current study pupil attitude toward school was measured by both the SSI total score and the SSI School Activities subtest score.

Table 2-6 presents the means for the various analysis groups on these two variables and Table 2-7 summarizes the two analyses of variance for each variable.

Table 2-6: Mean SSI Total and School Activities Scores for Various Analysis Groups

Classroom Characteristic	Level	Observation Periods 1	2	3	4	Total	Dependent Variable
Self-Concept	High	16.4	14.9	15.3	16.2	15.7	
Concern	Low	17.1	17.9	14.9	15.9	16.4	SSI Total
	Total	16.8	16.2	15.1	16.1		
Performance	High	16.7	15.4	15.0	16.9	15.9	
Change	Low	16.9	17.2	15.2	15.7	16.2	SSI Total
Concern	Total	16.8	16.2	15.1	16.1		
Self-Concept	High	5.6	5.1	5.0	5.4	5.2	
Concern	Low	5.5	6.1	4.4	4.9	5.2	SSI School
	Total	5.5	5.5	4.6	5.2		Activities
Performance	High	5.5	5.4	4.8	5.6	5.3	SSI School
Change	Low	5.5	5.7	4.5	5.0	5.1	Activities
Concern	Total	5.5	5.5	4.6	5.2		

Table 2-7: Summary of Analyses of Variance for SSI Total and SSI: School Activities Scores

Variable	Source of Variation	SCC df	SCC MS	SCC F	PCC df	PCC MS	PCC F
SSI Total	Classroom Characteristics	1	8.019	1.652	1	.748	--[a]
	Observation Periods	3	5.816	1.198	3	5.667	1.061
	Interaction	3	8.455	1.742	3	5.069	--
	Error	43	4.854		43	5.259	
SSI: School Activities	Classroom Characteristics	1	.002	--	1	.294	--
	Observation Periods	3	1.961	2.349	3	1.943	2.10
	Interaction	3	1.818	2.178	3	.407	--
	Error	43	.835		43	.926	

[a] F values of less than 1 are not reported.

$F_{1, 43; .99} = 7.31$

$F_{3, 43; .99} = 4.31$

The variation among means listed in Table 2-6 is shown to be non-significant and due to chance in the summary of analyses presented in Table 2-7. Based on these results, there is no reason to believe that pupil attitude toward school is related to the length of operation of the migrant education summer school programs. Nor is there reason to believe that either of the two classroom characteristics examined--Self-Concept Concern and Performance Change Concern--has any special effect on the relation which is obscured in the overall analysis.

As in the case of the SAI, going beyond the major evaluation questions to an examination of individual item responses by the total sample (N - 915) of summer school pupils yields results which have implications for program operation.

Twenty of 23 items regarding attitude toward school yielded a significantly greater proportion of positive-keyed responses than negatively-keyed responses. Table 2-8 presents 13 items for which keyed response percentages exceeded 70%.

Table 2-8: Thirteen Items Evoking Greatest Proportion of Positively-Keyed Responding

Item	Percent
Do you like to paint pictures at school?	90
Is school a happy place for you to be?	83
Do you get sick at school a lot?	81
Do you like to sing songs with your class?	80
Are the children in your class friendly to you?	79
Do you like the other children in your class?	79
Do you like to come to school a lot?	79
Do you like to read in school?	78
Do you always have to do what the other children want to do in school?	76
Are adults at school friendly to children?	76
Do you like to learn about science?	76
Do you like school more than your friends do?	73
Do you like to stay home from school?	71

The three items which did not have a significantly greater percent of positively-keyed responses are listed in Table 2-9.

Table 2-9: Three Items Not Showing Significantly Greater Proportion of Positively-Keyed Responses

Item	Percent
Do other people at school care about you?	52
Does your school have too many rules?	50
Are you always in a hurry to get to school?	50

An examination of the mean percent responding in the positively-keyed direction for SSI subtests shows the following: General School Sentiment, 73%; School Activities, 73%; Peers, 70%; Structure and Climate of School, 62%.

Pupil Reading Achievement

In the study, reading achievement was defined by performance on the Gilmore Oral Reading Test and the Survey of Primary Reading Development. Although the SPRD, a measure of silent reading achievement, conforms more closely to traditional educational objectives related to reading the oral test may be hypothesized to be more sensitive to the techniques of a program which stresses oral language training and to a population learning English as a second language.

Gilmore Oral Reading Test

This instrument yields three scores: Accuracy, Comprehension, and Rate. Each of these variables was analyzed in the current study. Table 2-10 presents the means for each of the various analysis groups on each of these variables.

Table 2-10: Mean Gilmore Accuracy, Rate and Comprehension Scores for Various Analysis Groups

Classroom Characteristic	Level	Observation Periods 1	2	3	4	Total	Dependent Variable
Self-Concept Concern	High	12.9	16.6	--[a]	13.6	14.1	
	Low	17.5	14.4		20.5	15.7	Accuracy
	Total	14.3	15.0		15.3		
Performance Change Concern	High	11.8	16.7	17.3	12.8	13.6	
	Low	22.9	14.1	14.1	19.0	16.2	Accuracy
	Total	14.3	14.9	15.1	15.3		
Self-Concept Concern	High	12.2	12.9	--[a]	11.2	12.0	
	Low	15.3	12.0		16.9	13.2	Comprehension
	Total	13.1	12.3		12.6		
Performance Change Concern	High	11.6	13.6	11.7	10.5	11.6	
	Low	18.0	12.2	11.8	15.6	13.5	Comprehension
	Total	13.1	12.7	11.7	12.6		
Self-Concept Concern	High	41.7	61.0	--[a]	54.8	51.4	
	Low	51.0	54.3		62.0	54.7	Rate
	Total	44.6	56.0		56.6		

Table 2-10: (Continued)

Classroom Characteristic	Level	Observation Periods 1	2	3	4	Total	Dependent Variable
Performance Change Concern	High	40.8	53.3	64.8	50.7	48.8	
	Low	57.2	60.7	47.8	64.8	57.4	Rate
	Total	44.6	58.4	52.9	56.6		

[a] Because of an unusual distribution of classrooms within the SCC categories from observation period to observation it was necessary to collapse the third and fourth observation periods for this variable.

Table 2-11: Summary of Analyses of Variance for Gilmore Oral Reading Test Scores

Variable	Source of Variation	SCC df	SCC MS	SCC F	PCC df	PCC MS	PCC F
Accuracy	Classroom Characteristic	1	35.76	--[a]	1	87.89	--
	Observation Period	2	6.47	--	3	3.82	--
	Interaction	2	75.12	--	3	115.74	1.12
	Error	42	104.72		40	103.72	
Comprehension	Classroom Characteristic	1	31.97	--	1	67.45	1.60
	Observation Period	2	10.71	--	3	11.78	--
	Interaction	2	35.80	--	3	35.88	--
	Error	42	41.98		40	42.17	
Rate	Classroom Characteristic	1	15.80	--	1	402.73	--
	Observation Period	2	586.60	--	3	325.21	--
	Interaction	2	269.75	--	3	517.97	--
	Error	42	1266.11		40	1290.07	

[a] F values of less than 1 are not reported.

A summary of the analyses of variance for the Gilmore Scores is presented in Table 2-11. On the basis of the results of the analysis it must be

concluded that variation among the means as observed in Table 2-10 is due to chance. In other words, it must be concluded that the oral reading levels of children in the migrant education programs is not related to the length of operation of the programs' classrooms. Nor do classrooms which emphasize a high concern for self-concept or a high concern for performance change have any special effects which are obscured by the overall analysis.

As a description of the reading levels of children in the summer school programs, the Gilmore Oral Reading Test results were interesting on several points beyond the scope of the general evaluation questions.

First, on the average, the pupils sampled (five randomly selected from within each classroom) were reading at a level roughly comparable to the beginning of the second grade. The average age of pupils in the program is estimated to be approximately 103 months, which would place the average child at the third grade level.

A second observation related to the amount of within class variation in reading levels. On the basis of the Gilmore results, it was possible to classify each classroom into one of three arbitrary categories differing with respect to the difference between the individual with the highest reading level and the individual with the lowest reading level. Low and moderate variation classrooms were those for which the difference between the best and poorest readers was less than three grade equivalent levels. High variation classrooms were those for which the difference between the best and poorest reader was three or four grade equivalent levels. Classrooms were classified as having extreme variation, if the difference between the best and poorest readers was greater than five grade equivalent levels.

Of the 63 classrooms for which this data was available, 65 percent were moderate or low in reading level variation among pupils; 22 percent were high in this variation; and 13 percent were extremely variable.

Another way of looking at the variability of lack of homogeneity with respect to reading levels within the classrooms of the study was to focus on those classrooms in which the poorest reader was actually at some pre-reading level, i.e. received a score of zero on the Gilmore Accuracy Scale. In the sample for 27 classrooms at least one of the five randomly chosen pupils demonstrated this characteristic. By examining the average reading level of the best reader in these classrooms, an additional indicator of the variability within these classrooms is obtained.

On the average the best reader in classrooms containing pupils at a pre-reading level was reading at a beginning third grade level.

Survey of Primary Reading Development

This test is made up of six subtests ordered according to difficulty and the typical sequence of reading development. The total score indicates the relative position of the individual in the sequence of skills that make up reading performance. Since performance on the subtests is sequentially cumulative the total score provides the meaningful evaluative index.

Table 2-12 shows the mean SPRD total scores for the various analysis groups. Table 2-13 shows the summary of the analyses of variance for this variable.

Table 2-12: Mean SPRD Total Scores for Various Analyses Groups

Classroom Characteristic	Level	Observation Periods 1	2	3	4	Total
Self-Concept	High	67.0	62.4	55.3	63.7	61.8
Concern	Low	75.0	75.8	71.9	46.6	65.3
	Total	71.7	66.9	65.3	51.8	
Performance	High	66.0	65.5	65.4	59.9	64.0
Change	Low	73.6	69.6	65.1	42.4	63.5
Concern	Total	71.7	66.9	65.3	51.8	

Table 2-13: Summary of Analyses of Variance for SPRD Total Scores

Source of Variation	SCC df	SCC MS	SCC F	PCC df	PCC MS	PCC F
Classroom Characteristic	1	428.11	1.47	1	73.17	--
Observation Periods	3	1007.74	3.46*	3	942.2	2.93*
Interaction	3	681.61	2.34	3	362.9	1.13
Error	44	291.39		44	321.2	

* Significant at $P < .05$

The means for observation periods shows a consistent overall decline. The significant F-value for this difference (the test for observation period differences is duplicated in the design of the study) suggests a systematic, non-chance difference between the first and final observation periods.

The meaning of this difference cannot be attributed to the program since it requires a special logic to predict that an educational program will function to decrease the reading performance of its students. In addition, previously described age and sex proportion shifts in the sample between observation periods provides a plausible rival hypothesis

for this outcome. It is not the intention to discuss results of the study in this section of the report. Rather, it is the purpose to provide the essential data to support the conclusions and recommendations discussed in the following section. Further comment on the age/sex shift interpretation is limited to a presentation of pertinent data.

Since the classroom is the unit of observation in the current study, statistical tests which would use individual test scores as the units of analysis were considered inappropriate. However, an examination of the achievement levels of male and female pupils of different age levels was considered appropriate to an understanding of the significant difference reported in Table 2-13.

Figures 2-1 through 2-5 show the mean SPRD scores for pupils of five different age levels. Examination of these tables shows that in general pupils of the same age achieved at roughly the same levels at each of the observation periods, the exception was for five and six year old pupils. This suggests support for the hypothesis that the difference observed in Table 2-13 was mainly due to age shifts in the pupil population.

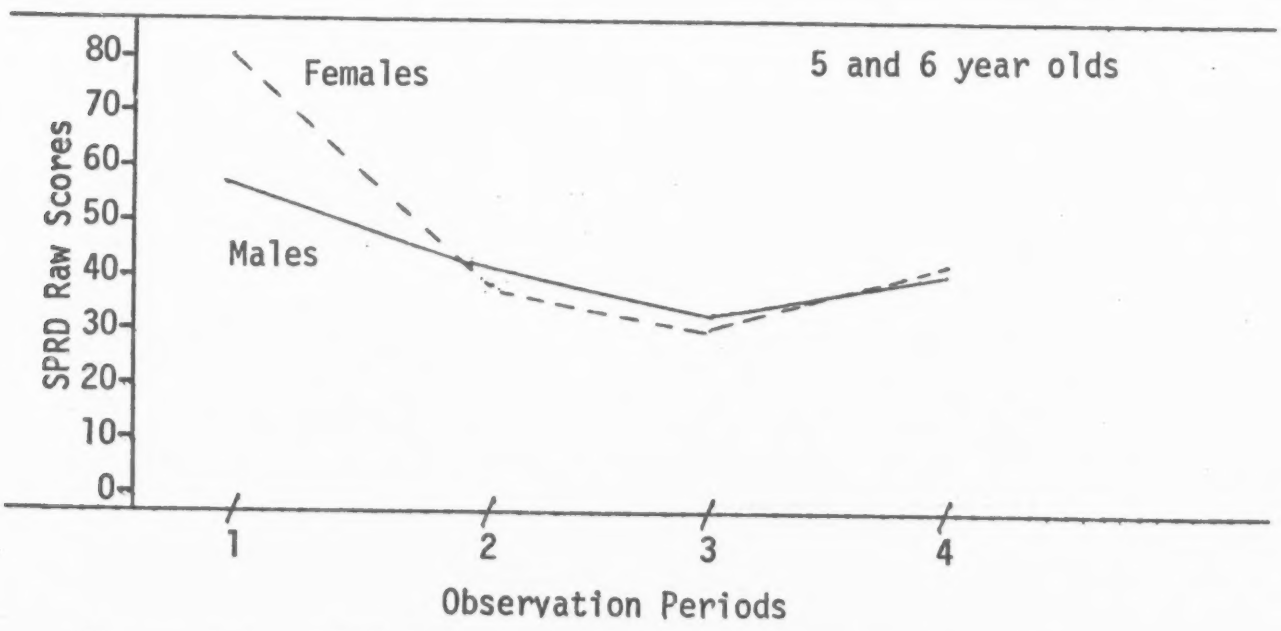

Figure 2-1: SPRD Scores of 5 and 6 Year Olds (N = 217)

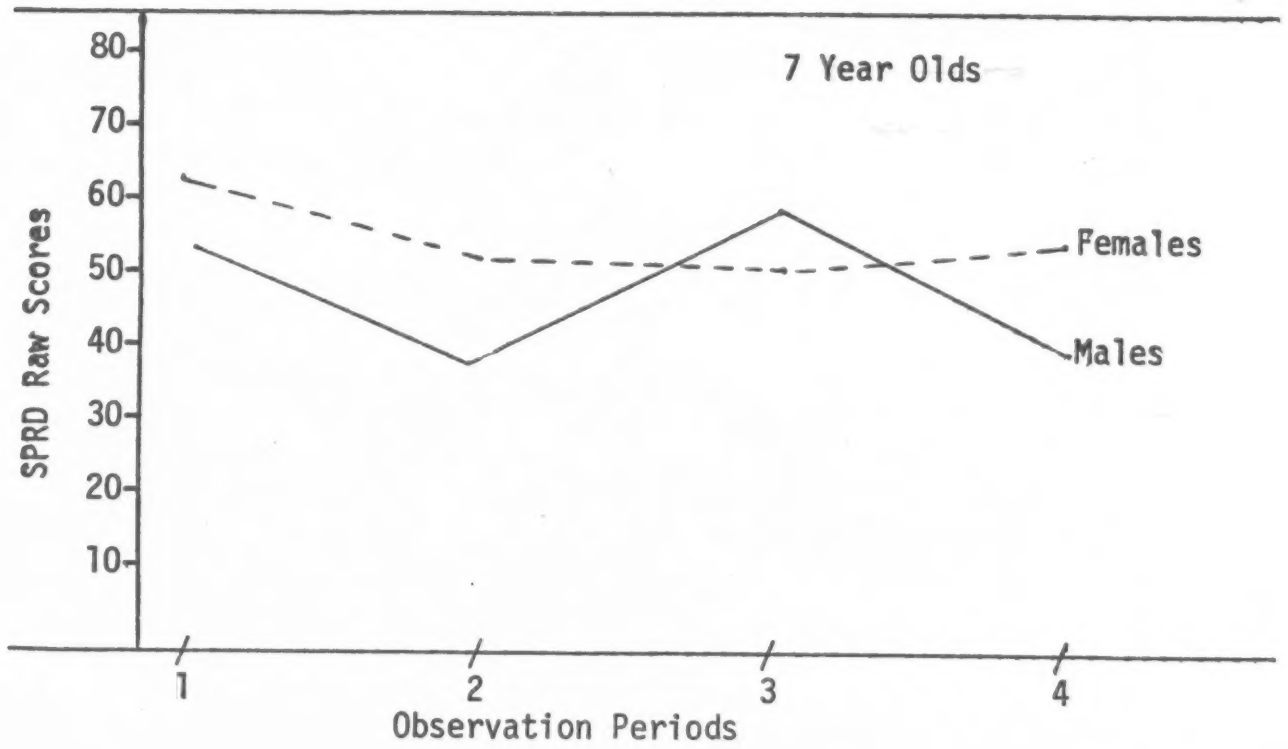

Figure 2-2: SPRD Scores of 7 Year Olds (N = 142)

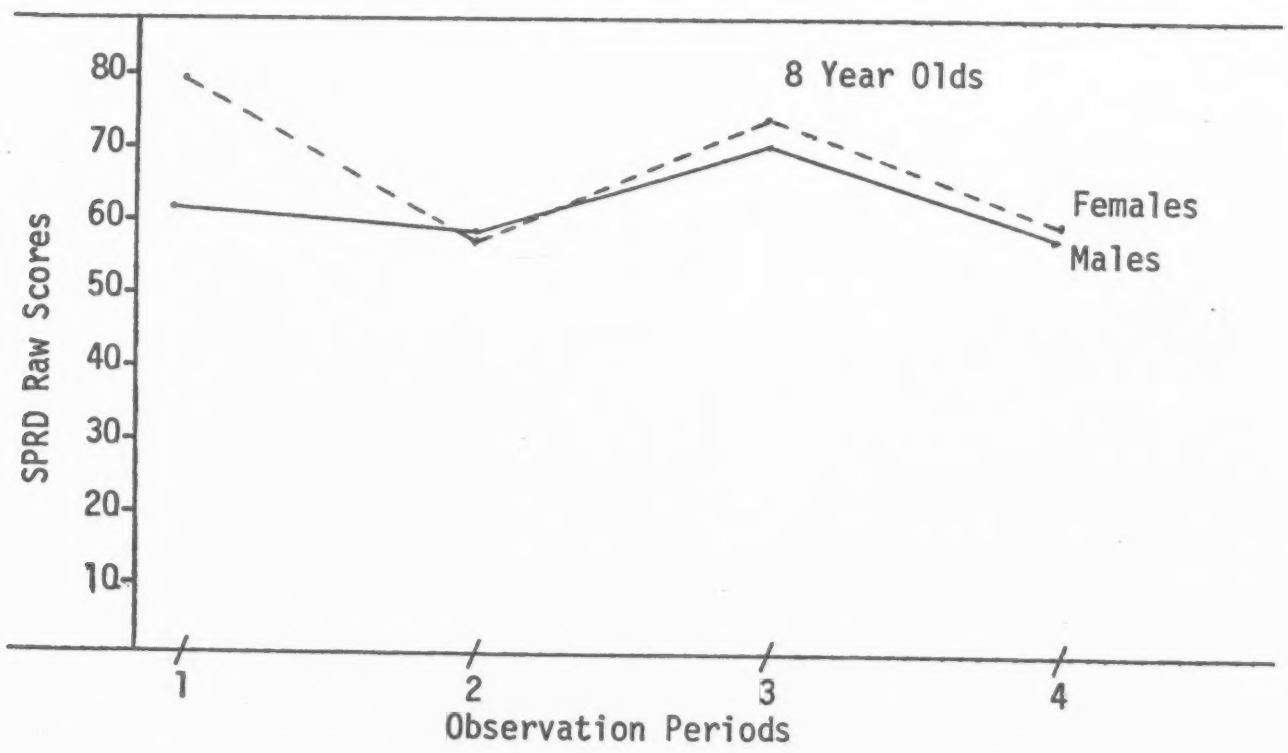

Figure 2-3: SPRD Scores of 8 Year Olds (N = 184)

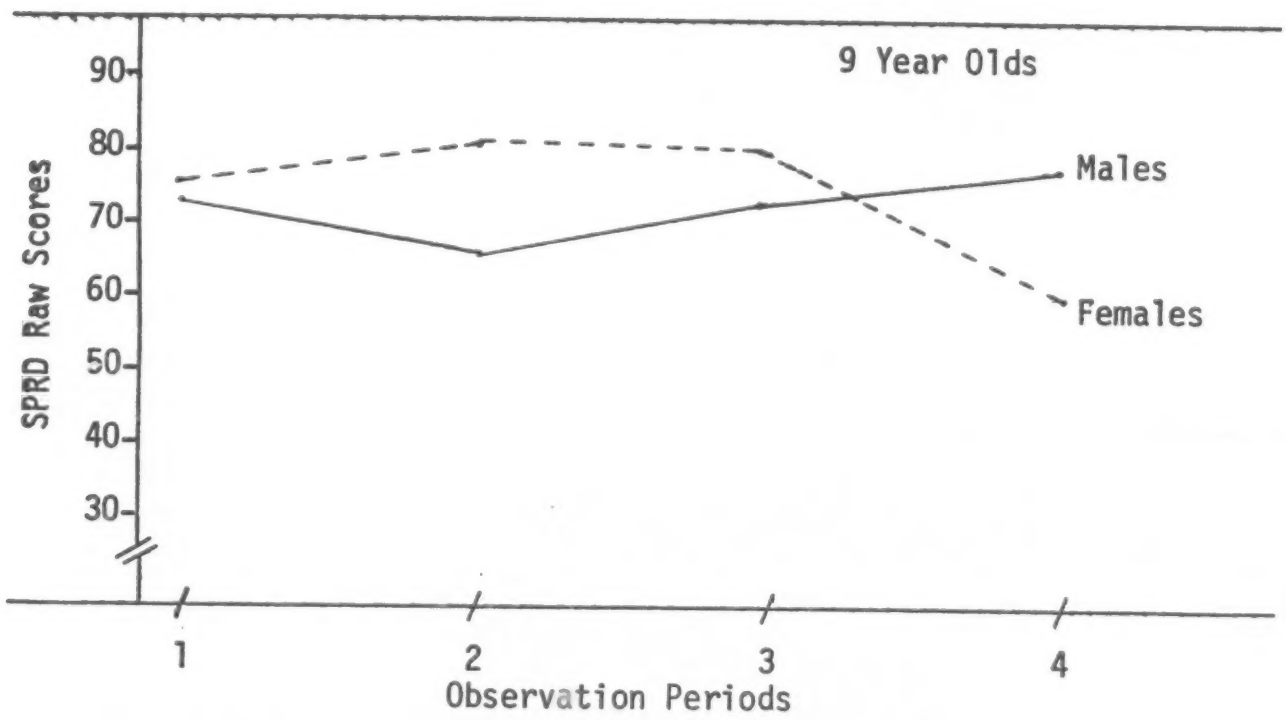

Figure 2-4: SPRD Scores of 9 Year Olds (N = 170)

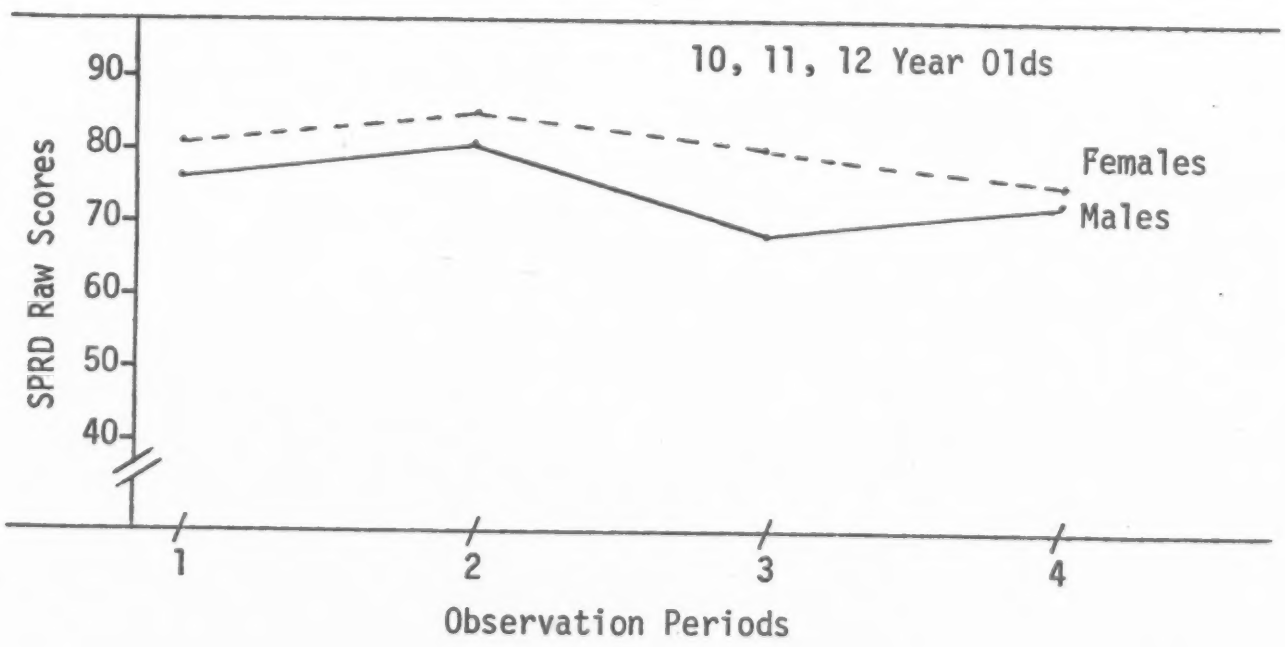

Figure 2-5: SPRD Scores of 10, 11, 12 Year Olds

The exception, the data for five and six year old pupils are remarkable. Of the 217 five and six year olds studied, about ten percent of them appear in classrooms sampled in the first observation period. However, these 24 pupils had mean reading achievement levels far above any age-level expectations--approximately the beginning of the second grade for males and the beginning of the third grade for females. This clearly atypical group of five and six year olds served to exaggerate estimates of initial achievement levels in the design of the current study. In addition to the age shift, this atypical group appeared to be responsible for the significant differences among observation periods.

The analysis of SPRD scores provides no evidence of the expected relationship between the length of operation of migrant education summer school classrooms and achievement levels of pupils. In addition, there is no evidence of significant special effect related to high self-concept concern or high performance change concern. Although both of these clusters of classrooms in relation to their low concern comparison groups tended to resist the trend toward lower scores for later observation periods, this counter trend was not significant.

Beyond the two general evaluation questions, several descriptive factors relating to the reading achievement of children in the migrant summer programs emerged. Table 2-14 shows the average expected grade equivalent levels and the average estimated grade equivalent levels for pupils of the five different age categories described in Figures 2-1 to 2-5. In addition, the table describes the relative position of the typical child of the age group in the sequence of skills that define reading development.

Table 2-14: Average Expected Grade Equivalents and Average Actual Grade Equivalents for Pupils in Five Age Categories

Age Level	Expected Reading Level	Actual Reading Level	Skill Development
5 - 6 years	Lower to middle first grade	Upper first grade	Can comprehend relatively large number of written words.
7	Upper first grade	Lower second grade	Can read words in sentences and is also able to recognize meaning in greater number of written words.
8	Upper second grade	Upper second grade	Making transition from reading isolated words and sentences to getting meaning from overall story content.
9	Upper third grade	Lower third grade	Can recognize directly stated facts and find meanings from the content of the story. Can note the presence or absence of specific content in a story without having to match specific words.
10, 11, 12	Middle to upper fifth grade	Middle third grade	Not significantly different than 9 year olds.

On the basis of these data, the silent reading achievement of children in migrant education programs, unlike the oral reading achievement, was at or above age level expectations up to the age of 9 or through the second grade.

Summary of Results

The data of the study provide no evidence that pupil performance levels on measures of self-esteem, attitude toward school or reading achievement are associated with the length of time spent in migrant education summer school classrooms. In addition, no special effects related to the level of self-concept concern or performance change concern were noted for any of these variables.

Several incidental findings were described: (1) pupils of migrant education summer school programs tend to be significantly positive in their statements about themselves; (2) the pupils studied reported, on the whole, statements which would indicate overwhelmingly positive attitudes toward school; (3) within class variation with respect to achievement in reading tended to be high; (4) average actual oral reading performance is less than average expected oral reading performance; (5) average silent reading performance matches or exceeds age-level expectations up to age 9 or the third grade.

The findings are discussed and implications suggested in the final section of the report.

CONCLUSIONS AND IMPLICATIONS

On a statewide basis, the summer school programs of the Migrant Education Program of the State of Michigan have no substantial effect on the general performance of pupils on measures of self-esteem, attitude toward school or reading achievement. Although changing performance on these variables is implied in the priorities of the migrant education program and although teachers in specific migrant education projects accept and verbalize these priorities, the results of the study raise doubts about the ability of the individual projects to translate these priorities into attainable objectives which are common across all projects.

The implications of this conclusion are two-fold. First, the migrant education program must (1) identify a systematic process for translating statewide priorities into specific educational objectives; (2) train those individuals responsible for formulating project-level objectives to use the process; and (3) provide incentive for project-level program development which conforms to state-level specifications.

Second, program evaluation must be diversified and made to conform to the specific objectives of project-level programs rather than statewide priorities. One possibility for increasing the match between evaluation measures and project objectives would be the use of item-based testing program similar to that of the National Assessment of Educational Progress. In such an evaluation program, individual items

would be selected on the basis of their relationship to specific objectives identified as important within a project. Analysis would focus on changes of the project samples' responses to single items rather than total scores.

The current study suggested that neither of two variables on which classrooms could be differentiated produced any specifical effects which had been obscured by the overall analysis. Classrooms in which there was a "high" concern for self-concept development were no different in promoting changes in self-concept (or in the other variables) than classrooms classified as "low" in this concern. It should, of course, be emphasized that the classification into these two categories rests on relative rather than absolute measures of "self-concept concern." The relative differences in the current study may not have been enough to produce measurable effects.

In addition, however, the data from the Self-Appraisal Inventory show the children of the summer school programs to be generally positive in their statements about themselves. Although there is no standard against which to compare the positive level of these responses, it is clear that the response patterns were systematically positive. The children of the program do not in any large numbers endorse statements which reflect negative evaluations of themselves.

In addition to statements related to a general self-esteem, statements reflecting self-esteem in three specific contexts were administered to the children: school context, peer group context and family context. Self-esteem in the school context is as high as general self-esteem. It is in relation to the peer group and family contexts

which children endorsed statements which were interpreted as reflecting a less positive self-concept. Yet it is in reference to these contexts which response interpretation is likely to contain some cultural bias.

The statement which evoked the greatest proportion of negative-keyed responding is an appropriate example. About 74 percent of all children in the sample responded, "No," to the question, "Do you tell your family when you are mad at them?" In the context of middle-class anglo-American culture lack of openness within the family group may be an index of a less strong self-concept. In the context of the migrant family largely Mexican American in origin, the ability to subjugate one's own feelings to the preservation of cohesiveness and unity may be a sign of strength of character. To endorse a statement which describes one's behavior in a way that represents it as a threat to family unity and obstruction of its efficiency in coping with important tasks can hardly be thought of as reflecting a positive self-concept. In other words, a negative response to this question may be a more appropriate index of positive self-concept for Mexican American children of migrant workers.

Indeed, the peer group context and the family context are more likely to reflect cultural differences than the school context and the general self-concept questions. Nevertheless, the responses in these areas were only slightly less positive than response to general self-concept questions.

The conclusion that the children of migrant education summer school programs have generally positive self-concepts has several implications for teachers and project directors. First, lack of evidence that projects do change self-concept must be viewed with understanding. It

is one thing to attempt to raise levels of self-esteem among children who have general disbelief in their abilities and whose statements about themselves are overwhelmingly negative. It is clearly a more difficult matter to try to measurably raise levels of self-esteem which are already relatively high. The current data suggests that the latter is more likely the situation than the former, at least with respect to general self-esteem and self-esteem in the school context.

Second questions must be raised about the priority given to "raising" the levels of self-esteem in the migrant education projects. The data suggest that a focus on self-concept is neither effective nor necessary.

The evidence regarding attitude toward school leads to conclusions and implications similar to those for self-concept. The pupils of the current study were, in general, overwhelmingly positive in their statements about school and school activities.

Statements to which there was not a significantly greater proportion of positively-keyed responses were in the main related to the climate of the school. One example was "Do other people at school care about you?" Although statements related to school climate received less positive response, the general attitude of the pupils toward school was not similarly affected. The data illustrate the complexity of attitudes toward school and suggest that a child may have generally positive feelings about school when the climate created is less than positive. Attitudes toward school, in general, and learning activities in particular are not highly dependent on the child's perception of the climate of the school.

The implications at both the statewide and local-project levels of the data on attitude toward school may be summarized as follows:

1. The focus of concern on this variable is relatively inappropriate. For children in migrant education programs, techniques used to foster more positive attitudes toward school are not necessary and do not appear to be effective.

2. Concern about the climate of the school is traditionally interpreted to mean "the teacher should love the children" and is considered to be an important factor influencing both attitude and achievement. Such concern may be deemed unnecessary, at least for children in the migrant education program. Attitudes toward school seem to be more reflected in positive feelings about accomplishments in relation to learning activities than in reactions to the climate of the school.

The data on reading achievement lead to several conclusions. First, the reading achievement levels of children of migrant education programs is underestimated if the focus is on oral language behavior rather than silent reading achievement. Scores on oral reading performance show that, in general, this performance does not match age level expectations. At the same time, however, the data on silent reading achievement shows that the gap between the ability to perform skills related to silent reading achievement and age-level expectations does not appear until approximately the third grade.

The conclusion that the critical problems with reading achievement among migrant children are not centered in the early learning stages but in the later stages suggests the following implications. First, although a focus on oral language may have some other advantages, it obscures the fact that the early silent reading skills are comparable to age level expectations. It focuses the teacher's attention on an "observable" pupil deficiency which may be relatively less important than the less observable pupil strength. The teacher may actually be led to believe that the deficiency is general rather than specific to oral language skills.

Second, in the effort to remedy the "deficiency" the teacher may over select and emphasize oral language activities to an extent which limits activities which promote the continued attainment of silent reading skills. If this happened, it could be expected that pupils whose initial silent reading skills were comparable to those of their age-mates would fall behind and develop later skills more slowly and with greater difficulty. In such a case, instruction would, in part, be a cause of the lagging development of reading skills.

Third, clearly the present problems of the children in migrant education programs cannot be met by a continued high level of priority on oral language training, although such training may remain an important part of the overall program. Priorities need to be reordered to match the problems, which for reading achievement begin to appear for later skill development rather than initial or early skills.

Several incidental findings lead to conclusions which have implications for teacher training and selection as well as program development. The data suggest that migrant education classrooms are extremely heterogeneous with respect to reading achievement. The traditionally trained teacher and the traditionally structured classroom is equipped to deal with children in relatively homogeneous groups, i.e. for example children within 1 or 1 1/2 grade levels with respect to achievement. Since it is apparently not feasible to arrange summer school classrooms on this basis, the selection and training of teachers for the summer school programs must recognize and adapt to this fact.

The implication is clear. If teachers have not had professional preparation in individualizing instruction, they cannot begin to deal with the wide range of variation in the summer school program. In

selecting teachers, preference should be given to those who have had experience in individualizing instruction. In preparing preservice workshops and training sessions, special attention should be given to skill development in this area. In program development, preference should be given to materials and strategies which are compatible with individualized instruction.

In summary, on the basis of the data of the current study it is impossible to conclude that migrant education projects in the summer are effectively modifying the behavior of the children in the areas of concern suggested by state-level priorities. It does, however, appear that the priorities may be misplaced and not matched to the actual educational problems of the children. A focus on self-concept and attitude development appears to be unnecessary. Placing continued priority on oral language training may serve to obscure the strengths of the pupils being served and may serve to divert the attention of project directors and teachers from more important problems.

Based on the conclusions of the study the implications for program modification were identified:

1. The Migrant Education Program should accept its leadership of local projects by developing, endorsing, and fostering the use of a systematic procedure for translating state-level priorities into specific behavioral objectives.

2. Evaluation should focus on the specified objectives rather than the statewide priorities.

3. Priorities relating to self-concept, attitude development and oral language training should be de-emphasized.

4. In teacher selection and training for the summer school program emphasis should be given to the teacher's skills in implementing individually prescribed instruction.

5. In program development at the project-level, the use of materials and activities compatible with individualized instruction should be given preference.

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